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FACILITATING NATIONAL MONITORING AND IMPLEMENTATION OF THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

Note by the Executive Secretary

1. At its tenth meeting, the Conference of the Parties adopted the Strategic Plan for Biodiversity 2011-2020 (decision X/2). Subsequently, during its eleventh meeting, the Conference of the Parties, in paragraphs 11 and 12 of decision XI/3 A, requested the Executive Secretary to undertake a number of tasks to enhance the ability of Parties and the global community at large to monitor progress in implementing the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets, including the development of an explanatory practical toolkit on each of the Aichi Biodiversity Targets. Previously, in decision VIII/14, the Conference of the Parties decided to establish an on-line facility to support national reporting, through the clearing-house mechanism, for use by Parties on a voluntary basis as a planning tool.

2. The present note has been prepared to provide the Subsidiary Body on Scientific, Technical and Technological Advice with an update on actions that have been taken to address the above requests. The document contains two sections. The first section addresses the development of an online reporting tool for monitoring progress towards the implementation of the Strategic Plan for Biodiversity 2011-2020. The second section contains information related to a practical toolkit for measuring progress towards the attainment of the Aichi Biodiversity Targets. Both the online reporting tool and the toolkit aim to strengthen national capacities to monitor and assess progress towards the implementation of the Strategic Plan for Biodiversity.

I. ONLINE REPORTING

3. As noted in document UNEP/CBD/SBSTTA/17/2 the Secretariat of the Convention on Biological Diversity has developed a pilot online reporting tool. This tool has been developed in light of the ongoing efforts to further develop and enhance the clearing-house mechanism and draws on the functionality of the Biosafety Clearing-House.

4. The online reporting tool is intended as a complement to national reporting and not as a replacement for it. It will enable countries to update progress towards each of their national targets on an ongoing basis. However, at least in this first phase, it will not seek to capture the breadth of information

* UNEP/CBD/SBSTTA/17/1.

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and experiences normally contained in periodic national reports. The online reporting tool will also facilitate technical cooperation among Parties, in line with Article 18 of the Convention, *inter alia* by facilitating the sharing of information on the design and application of indicators and on policy support tools.

5. This online tool will allow countries to enter several different types of information. It has fields to capture information related to regional, national and subnational targets and the means to assess progress towards them. The system will also allow Parties to enter information related to their national indicators, policy support tools, and activities. Additional information on the types of information that can be captured by the online reporting tool is contained in annex I below.

6. The reporting system will also allow Parties to link the information they have entered to the relevant Aichi Biodiversity Targets, to the indicative list of indicators for the Strategic Plan for Biodiversity 2011-2020 contained in decision XI/3, and to other information they have already entered in the system. The tool will also allow Parties to directly submit their national biodiversity strategies and action plans and their national reports, as well other relevant documents.

7. In addition to capturing and organizing the information entered by Parties, the online reporting tool will enable Parties to undertake periodic assessments of progress towards their national targets, as well as to assess national contributions towards the attainment of the global Aichi Biodiversity Targets. Parties will be able assess their progress towards either their national target or the Aichi Targets using one of five categories (on track to exceed target, on track to achieve target, progress towards target but at an insufficient rate, no significant change, moving away from target) as well as provide additional supporting information and an indication of the level of confidence in the assessment.

8. Parties will be able to view the information they have entered in the tool organized by their national target or by the Aichi Biodiversity Targets. The online reporting tool will allow Parties to, at a glance, identify those areas where progress is being made and those areas where more efforts may be needed. It will also help to identify indicator development needs at national level as well as areas where more information is needed or is in need of being updated.

9. The online reporting tool will allow one main user, such as the national focal point, to validate and publish all information. However, the main user may designate as many national authorized users as it wishes. National authorized users may enter information and prepare drafts but will not publish information. The responsibility for validating and publishing information will remain with the main user.

10. Further information on the online reporting tool will be presented during a side event during the seventeenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 17). In addition, an information kiosk will be available at SBSTTA 17 where Parties may begin exploring the functionality of the tool. A practical guide for the use of the online reporting tool will also be developed. As the reporting tool is still being developed, feedback on how it can be rendered more useful to Parties is welcome. During the pilot phase access to the online reporting system will be password-restricted. Parties are encouraged to take part in the pilot phase and can contact the Secretariat (secretariat@cbd.int) to obtain a user account.

II. TOOLKIT FOR MONITORING PROGRESS TOWARDS THE AICHI BIODIVERSITY TARGETS

11. As a complement to the indicative list of indicators available for assessing progress towards the goals of the Strategic Plan for Biodiversity 2011–2020 noted by the Conference of the Parties in decision XI/3 and the information generated by the Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020 (UNEP/CBD/SBSTTA/15/INF/6), the Secretariat is developing a practical toolkit to assist Parties in monitoring progress towards the attainment of the Aichi Biodiversity Targets.

12. The toolkit will contain information for each Aichi Biodiversity Target and will examine different

ways in which progress can be assessed, including by using indicators (both direct and proxies) and activities. The guide, when complete, will also contain links to other relevant sources of information.

13. A working draft of the toolkit is contained in annex II of this note. It contains information for Aichi Biodiversity Targets 1, 12, 15 and 17 as well as for the agricultural component of Aichi Biodiversity Target 7. As the information contained in the annex is a working draft, the Secretariat would welcome any feedback on how it could be improved and made more useful to Parties.

Annex I

TYPES OF INFORMATION CAPTURED BY THE ONLINE REPORTING TOOL

The information captured by the online reporting tool can be divided into four categories: information related to national reports; information on national targets; information related to national indicators, activities and tools; and information on assessments of progress. Each category of information is further described below.

Some information fields in the online reporting tool will be mandatory, but most will be optional. Where possible drop-down menus, as well as pre-populated lists that Parties may choose from have been included to facilitate the entry of information. Parties will also have the option of saving drafts so that they may save their progress and return at a later time. Parties will also have the option of adding links to other sources of information and/or attaching other reports or documents.

1. National reports

In addition to directly allowing Parties to submit electronic copies of their national biodiversity strategies and action plans, their national reports as well as other relevant reports, the online reporting tool will also capture a variety of information related to these reports. The main types of information included are:

- The official title of the report;
- The type of report (national report, national biodiversity strategy and action plan, or other report);
- The level of the report's application (regional/multi-country, national/federal or subnational);
- The report's status (draft, final or officially approved);
- A summary of the report;
- The time period the report refers to.

2. National targets

The online reporting tool will allow Parties to add their national targets as well as a variety of information associated with them. The main types of information included are:

- The name of the target;
- A description of the target;
- The target's level of application (regional/multi-country, national/federal or subnational);
- Main and other related Aichi Biodiversity Target;
- Information on the means to assess progress towards the target;
- Links to national indicators;
- Links to relevant partners.

3. National indicators, activities and policy support tools

The online reporting tool will allow Parties to record and link nationally relevant information to either their national targets or to the Aichi Biodiversity Targets. For national indicators, activities and relevant policy support tools, Parties will be able to indicate, among other things:

- The name of the indicator, activity or policy support tool;
- A description of indicator, activity or policy support tool;

- A level of application (regional/multi-country, national/federal or subnational)
- The status of the activity (planned, ongoing or completed) or policy support tool (required/endorsed or voluntary/other);
- Link the policy support tools they have entered to relevant CBD thematic programmes and tools;
- The main and other relevant Aichi Biodiversity Targets;
- Link to national targets;
- Link to national indicators;
- Link to relevant partners.

4. Assessments of progress towards national or Aichi Biodiversity Targets

For each of their national targets, Parties will be able to provide an assessment of the progress they have made towards it. It will be possible to provide assessments on an ongoing basis. Similarl,y for each Aichi Biodiversity Target Parties will be able to assess the contribution of the actions they have taken towards the attainment of the global target. For each national and Aichi Biodiversity Target, Parties will be able to include information related to:

- The period of assessment;
- Level of assessment (regional/multi-country, national/federal or subnational;
- Provide an assessment of progress;
- Provide a summary of the assessment using one of five categories (On track to exceed target, On track to meet target, Progress towards the target but at an insufficient rate, No significant change or Moving away from the target);
- Provide their level of confidence in the assessment using one of three categories (Based on comprehensive indicator information, Based on indicator information and expert opinion, Based on expert opinion) as well as an explanation of the level of confidence they have selected;
- Link to the national indicators used in the assessment;
- Link to relevant national activities.

Annex II

DRAFT ELEMENTS OF A TOOLKIT FOR THE ASSESSMENT OF PROGRESS TOWARDS THE AICHI BIODIVERSITY TARGETS

I. BACKGROUND

1. In decision XI/3 A, the Conference of the Parties requested to the Executive Secretary to develop an explanatory practical toolkit on each of the Aichi Biodiversity Targets, including possible steps for measuring progress towards these targets, taking into account national conditions and priorities; and to report to a meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) prior to the twelfth meeting of the Conference of the Parties. This annex provides some draft elements of a guide that will aim to address the later part of this request by providing Parties and other stakeholders with information on possible ways of monitoring progress towards the attainment of the Aichi Biodiversity Targets. The guide, once completed, will help Parties provide information through the online reporting tool described in section I of the information note.

2. These guides are meant to complement the set of quick guides to the Aichi Biodiversity Targets (http://www.cbd.int/nbsap/training/quick-guides/). Further guidance on indicators is contained in the report of Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020 (http://www.cbd.int/doc/meetings/ind/ahteg-sp-ind-01/official/ahteg-sp-ind-01-03-en.pdf) as well as in technical fact sheets that have been developed by the Biodiversity Indicators Partnership (www.bipindicators.net). Other guidance materials related to the development of national biodiversity strategies and actions plans (NBSAP), the fifth national reports and the Strategic Plan for Biodiversity 2011-2020 can be accessed from www.cbd.int/nbsap/, www.cbd.int/nr5/and www.cbd.int/sp/.

3. This guide should be considered as work in progress. It is envisaged that it will be periodically updated in the light of experiences and any comments received. The Secretariat would welcome any feedback on the use of the guide and suggestions for its improvement. Please send comments to secretariat@cbd.int.

II. INTRODUCTION

4. The Aichi Biodiversity Targets serve a flexible framework for the establishment of national and regional targets with the aim of promoting the coherent and effective implementation of the three objectives of the Convention on Biological Diversity. In order for the global targets and any associated national targets to be effective in bringing about the changes that are needed for biodiversity to be valued, conserved, restored and wisely used, progress towards them needs to be monitored. Monitoring not only allows for progress to be tracked but it is also useful for highlighting those areas where additional action may be needed, for guiding the development or implementation of policies and for communication with stakeholders.

5. Progress towards the targets can be assessed by monitoring the actions which have been taken to fulfil it and the impacts of these actions. For most of the targets, multiple indicators or types of information will be required to assess progress. While few Parties will have access to all the information that may be required to fully assess progress towards each of the targets (and to all elements), almost all Parties have access to some information which allow for at least partial assessments. As time progresses and additional information becomes available and enhanced systems are put in place to facilitate monitoring, our ability to accurately assess progress towards the attainment of the targets will improve. Moreover, experience gained by some countries can be shared with other countries through the clearing-house mechanism. As such, monitoring progress towards the attainment of the Aichi Biodiversity Targets needs to be viewed as an ongoing process.

III. MONITORING PROGRESS TOWARDS THE AICHI BIODIVERSITY TARGETS

1. Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably

6. Meeting Aichi Biodiversity Target 1 requires that people are aware both of the various values of biodiversity and of the actions they can take to conserve and sustainably use it. Understanding, awareness and appreciation of the diverse values of biodiversity underpin the willingness of individuals to make the necessary changes and actions to address the direct and underlying drivers of biodiversity loss. Greater awareness of the values of biodiversity also allows individuals and governments to assess more accurately the trade-offs of their actions and decisions.

7. A number of indicators relevant to this target have already been identified by the Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020. The most relevant of these are:

a. Trends in awareness and attitudes to biodiversity;

b. Trends in communication programmes and actions promoting social corporate responsibility;

c. Trends in public engagement with biodiversity.

(a) Trends in awareness and attitudes to biodiversity

- **Trends in awareness –** Changes in people's awareness and understanding of biodiversity and their attitudes towards it. The main way to directly assess people's awareness of biodiversity is through the use of surveys.[1] Surveys can be conducted over the Internet, by telephone, distributed through the mail or in person. Each method has strengths and limitations and the method that is best will vary with national circumstances. A variety of survey tools and methodologies exist that are available for Parties to use. In addition there are a number of companies which can be contracted to undertake surveys. With proper survey design, the same survey could be used to assess people's awareness of the values of biodiversity as well as their awareness of the types of actions they can take to conserve it. However, in order to develop trend information, any awareness survey would need to be undertaken at least twice. Surveys, by drawing attention to biodiversity issues, can also be used to help raise awareness of biodiversity and therefore in some circumstances could be seen as an action towards the attainment of this target.

(b) Trends in communication programmes and actions promoting social corporate responsibility

- **Media references** – Trends in references to biodiversity in national media. By monitoring references to biodiversity in various media outlets, such as newspapers, magazines and websites, it is possible to gauge how much attention is being paid to biodiversity. A number of tools are available that Parties can use to help monitor such trends. Similarly a number of companies also offer these services.

(c) Trends in public engagement with biodiversity

- **Public engagement** – Trends in the number of people or volunteer time spent working for environmental organizations, charities or related causes. In all countries there are different organizations that work towards various environmental objectives or goals. By monitoring trends in the membership of these organizations or by monitoring the amount of time individuals spend

[1] One example of a global survey on biodiversity awareness that has been carried is the Union for Ethical BioTrade's (UEBT) Biodiversity Barometer, which has been conducted four years in a row (2009-2013), with surveys carried out in 11 countries representing a large proportion of the world's population. For technical details see http://www.bipindicators.net/biodiversitybarometer.

volunteering for them, it is possible to gather information related to the value individuals place on biodiversity or certain elements of it. Some countries are already gathering this type of information.[2]

- **Attendance at relevant attractions** – Trends in the number of people visiting biodiversity-related attractions. By monitoring the number of people that visit attractions related to biodiversity, such as botanical gardens, zoos, aquariums or national parks, it is possible to collect information related to peoples interest in biodiversity. The World Association of Zoos and Aquariums has begun a worldwide survey of visitors to zoos that may provide relevant data in several regions.

8. In addition to the indicators above, Parties can also use the different actions they have taken to implement a target to help gauge their progress towards its attainment. Monitoring actions can be useful in situations where it takes time for the results of activities to become visible. The actions that are monitored should be of a strategic importance and that would make a relatively large contribution towards the attainment of the target. Such activities could include:

- The development and implementation of a coherent and sustained communication, education and public awareness strategy;
- The development of educational materials;
- The organization of awareness-raising events, such as those linked with the international day or decade for biodiversity.

7. Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity

9. This target requires that agriculture, aquaculture and forestry systems are managed sustainably. Sustainable management refers to a situation in which the use of the components of biodiversity occurs in such a way and at a rate that does not lead to their long-term decline. When a resource is used sustainably, it maintains its potential to meet the needs and aspirations of present and future generations. Similarly, the effects of production systems on other ecosystems and species should also be kept to a minimum.

10. As Target 7 refers to agricultural, aquaculture and forestry systems, monitoring progress towards this target needs to assess the sustainability of the activities in these different production systems. Given the differences between these three types of systems, different indicators are required.

7.1 Sustainable agriculture

11. Agriculture is a broad term that encompasses the cultivation of animals, plants, fungi, and other life forms for the purposes of providing food, fiber, and other products used to sustain life. The variety and variability of animals, plants and microorganisms used in agriculture is an important aspect of biodiversity. However, some agricultural practices are also a major cause of biodiversity loss.

12. In the context of the Aichi Biodiversity Target, some key elements of agricultural sustainability that need to be considered are the maintenance of biodiversity within agricultural ecosystems; the impact of agricultural systems on other habitats; and the efficiency with which agricultural inputs, such as water, fertilizers and agro-chemicals, are used. There is no single indicator that can address all of these different issues. Therefore multiple indicators will be needed to assess progress towards this target. However, at the same time, it is not necessary to have information on all the various elements of the target in order to be able to assess progress towards its attainment. By using different types of indicators and by taking stock

[2] For example see the indicator on "Taking action for nature: volunteer time spent in conservation in the UK" in *UK Biodiversity Indicators in Your Pocket 2012* (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/85754/BIYP_2012.pdf).
For the countries with national members of BirdLife International, trends in membership of these associations may be a useful indicator (www.birdlife.org).

of the actions that have been taken to help reach a target it should be possible for Parties to at least make a preliminary assessment of progress towards the attainment of a target.

13. A number of indicators relevant to this have already been identified by the Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020. The most relevant of these are:

a. Trends in area of agricultural ecosystems under sustainable management;

b. Trends in population of agriculture dependent species in production systems;

c. Trends in production per input;

d. Trends in proportion of products derived from sustainable sources.

14. Further guidance on these and other indicators is provided in the following sections. Many of these indicators can be useful for monitoring changes over time, but are not appropriate for comparing different countries or locations.

Trends in area of agricultural ecosystems under sustainable management and trends in population of agriculture dependent species in production systems

a. Agricultural ecosystem health

i. **Soil carbon** – Change in soil carbon. Soil carbon accumulates in agricultural soils as organic materials are deposited in or on it. Soil carbon is a key element of soil health and is also important in terms of climate change. Rather than directly measuring soil carbon, another option is to assess soil organic matter content.

ii. **Pollinators** – Trends in pollinators. Pollinators are crucial elements of many agricultural systems. As such, monitoring trends in these species can be used to provide information on the overall health of agricultural systems as well as on the impact that agricultural practices are having on these types of species.

iii. **Farmland birds** – Trends in farmland birds. Monitoring the status of farmland birds, as a number of countries and organizations are already doing, can provide information on the overall sustainability of agricultural systems.[3] Such information can serve as a proxy for the health of agricultural systems and of the overall impact that agricultural systems are having on the environment.

b. Agricultural biodiversity[4]

iv. **Breeds** – Change in the number of plant or animal breeds used in agricultural over time. The varieties of plant and animal species used in agricultural are an important element of agricultural biodiversity as this diversity is crucial in the resiliency of agricultural systems.[5]

Trends in production per input (agricultural resource use efficiency)

15. Agricultural systems often rely on a range of inputs in order to generate products. Monitoring the amount of these inputs that are used in agricultural systems provides information that can be used to assess progress towards this target. The main resources that could be monitored are land, water, fertilizers and pesticides.

[3] For example BirdLife regularly compiles information on farmland birds, as does the European Environment Agency.

[4] There are close links between these indicators and those that could be used to help assess progress towards Aichi Biodiversity Target 13 related to maintaining genetic diversity.

[5] For example, China in its third national report to the Convention on Biological Diversity provided information on the number of local rice varieties being grown through time.

a. Land

i. **Land-use change / Agricultural area** – Change in the proportion of land devoted to agriculture. One of the main ways the effects of agriculture on other ecosystems can be assessed is through its impact on land-use change. Monitoring changes in the area devoted to agriculture indicates if agricultural areas are expanding or contracting. When this information is considered in light of other types of habitat change, such as changes in the area of forests, it can provide a general indication of the effect of agriculture on other types of habitat.

b. Water

i. **Water withdrawals** - The proportion of water withdrawals used for agricultural production. Agricultural systems often require large amounts of water, the withdrawal of which can have a range of impacts both inside and outside of agricultural systems. Monitoring the water used in agricultural production can therefore provide an indication of the potential sustainability of a system.

ii. **Improved irrigation** - The percentage of agricultural areas using improved irrigation techniques. In situations where it is not possible to directly monitor agricultural water withdrawals, information on the amount of agricultural areas that are using techniques to enhance the effectiveness with which water is used, such as drip irrigation, can serve as a proxy of progress towards this target.

iii. **Soil salinity** - The amount of agricultural land that has become saline can be used to provide an indication of the efficiency of water use. As water is applied to soils it evaporates but the salts it contains remain. Over time, particular if inefficient irrigation techniques are used, these salts accumulate and can cause declines in agricultural yields.

c. Fertilizers

i. **Fertilizers** – The amount of fertilizer applied to agricultural systems over time. Many agricultural systems rely on the input of nutrients, in the form of fertilizers, to ensure agricultural yield. As the two most common types of fertilizers applied in agricultural systems are nitrogen and phosphorus, information related to their application could be also be used to assess progress towards this target. Already some countries are monitoring the consumption of nitrogen and phosphorus-based fertilizers and reporting this information to the Food and Agriculture Organization of the United Nations (FAO).

d. Pesticides and herbicides

i. **Pesticide and herbicide use** – The amount of pesticides and herbicides applied to agricultural systems over time. This information could also be expressed as the area over which pesticides and herbicides are applied. Various pesticides and herbicides are used to control agricultural pests. The efficient use of these chemicals is a key element of agricultural sustainability, as they can have unintended detrimental effects on agricultural systems as well as other ecosystems and non-targeted species.

16. The indicators related to land, fertilizers, water withdrawals, pesticides and herbicides can be expressed in different manners. They can be expressed as the absolute amount of the resource used over time, but they can also be expressed in relation to agricultural output. When expressed in relation to agricultural output they provide additional information on the overall effectiveness with which the resource is being applied. For example when information on the area devoted to agricultural production is combined with information related to agricultural production, such as tonnes of crops produced or heads of cattle raised, it is possible to assess whether agricultural areas are becoming more effective in producing resources. The indicators related to water, fertilizers, pesticides and herbicides can all be

expressed in a similar manner. Information related to resource use efficiency is important in informing decisions regarding whether it is more effective to produce more agricultural resources from a smaller area of land through more intensive farming techniques (intensification) or rather to expand the area under agriculture but to use the area in a less intensive manner (extensification). Reconciling these two different approaches will be important to making progress towards this target and monitoring progress towards it.

Proxies for trends in area of agricultural ecosystems under sustainable management

17. Biodiversity is a main element of agricultural systems and maintaining this biodiversity will be key in making progress towards this target. The main factors that could be monitored to assess biodiversity conditions within agricultural systems are the agricultural techniques used, the condition of agricultural ecosystems, and the diversity of agricultural species used.

a. Agricultural techniques

i. **Organic agriculture** – Changes in the area devoted to organic agriculture. This indicator could be expressed as the total amount of land devoted to organic agriculture over time.

ii. **Certified agriculture –** Change in the size of agricultural area with some form of sustainable certification. This indicator could be expressed as the total amount of land with some form of certification over time.

iii. **Conservation agriculture** – Change in the size of agricultural areas in which conservation agriculture techniques are applied. There are a number of agricultural techniques which are generally regarded as being beneficial to biodiversity. These include, but are not limited to, no-till agriculture, the maintenance of ground cover, and leaving crop residues on agricultural land. Determining which type of technique to monitor will be specific to each country.

18. The three indicators noted above can be expressed in several ways. They can be expressed as changes in total agricultural area over which they are used or as a percentage of the total agricultural area in a country. Further they can also be expressed in relation to the amount of agricultural products that are produced using these techniques.

19. While the presence of organic agriculture, certification schemes or the use of conservation agriculture techniques do not necessarily guarantee that agricultural practices in a particular area are sustainable, they do provide an indication that some agricultural practices that in theory would be in line with sustainable production are being used. Further, many countries already have information on these issues and are providing it to organizations such as the FAO.[6]

Activities

20. As a result of the inertia of biological systems, there may be significant time lags between when an action is taken and when its effect can be observed in any associated indicators. Taking into account these time lags, progress towards a target can also be assessed by examining the actions which have been taken to fulfil it. Such an approach can also be used in situations where indicators do not yet exist.

21. There are a number of strategic actions that if taken would increase the likelihood that this target is met. Examples of these include the development or enhanced enforcement of rules or regulations regarding the maintenance of agricultural buffer zones or hedgerows, or other types of policies designed to reduce the impact of agricultural systems on the environment. Similarly, actions to preserve agricultural genetic diversity, such as the establishment of gene or seed banks as well as the development of breeding programmes for endangered agricultural species. Keeping track of the strategic actions taken to reach a target can provide evidence of progress towards the attainment of a target.

[6] For example many Parties provide information to the FAO which is collected in FAOSTAT (http://faostat.fao.org/).

12. Target 12: By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

22. Target 12 relates specifically to known threatened species and has two components: preventing the extinction of known threatened species and improving the conservation status of threatened species. As such this target is relatively broad in scope, as threatened species and extinctions can occur in all ecosystem types and can be caused by various pressures. A number of indicators relevant to this target have already been identified by the Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020. The most relevant of these are:

- Trends in abundance of selected species;
- Trends in distribution of selected species;
- Trends in extinction risk of species.

23. As with other Targets, progress towards the attainment of this target can be measured by using different types of indicators. There are indicators that can be used to directly assess progress towards this target and indicators which can be used as proxies.

Direct measures:

- **Extinct species –** Number of species that have gone extinct. A simple count of the number of species that have gone extinct since the adoption of the Strategic Plan for Biodiversity 2011-2020 could be used to assess progress towards this target. However, as it can take a relatively large amount of time to undertake the assessments required to declare a species extinct this indicator is not particularly responsive to change. Therefore, given the time frame of the Strategic Plan, this indicator may provide limited information.
- **Conservation status –** Change in the conservation status of species. Conservation status provides an indication of the overall condition of a species and how likely it is to persist into the future. Different assessment methods exist for assessing the conservation status of species, but perhaps the one most widely used is that developed by IUCN which classifies species into one of several categories (least concern, near threatened, vulnerable, endangered, critically endangered, extinct in the wild, or extinct).[7] Information related to conservation status can be presented in several ways. Changes in conservation status can be presented for specific species. It can also be presented as an index, such as the Red List Index,[8] which contains information for several species. National Red List Indices (RLIs) can be calculated either by disaggregating the global indices, or by repeatedly assessing extinction risk at the national scale. Many countries have compiled national red lists which form the basis of the latter approach. There are 515 national Red Lists recorded for different taxa. These are from 122 countries; 43 are available online.[9]
- **Population trends** – Change in the population size of selected species. By monitoring changes in the population size of specific species it is possible to determine if the condition of the species is improving, staying the same or declining. Such assessment could be undertaken for species which are particularly important. Many countries are already including this type of information in their national reports to a certain extent. Alternatively, if enough information is available it could be presented as an index, such as the Living Planet Index.[10]

[7] For further information on these categories see http://www.iucnredlist.org/.

[8] For further information on the Red List Index see http://www.bipindicators.net/rli/2010.

[9] For further information on national red list assessments see http://www.nationalredlist.org/.

[10] For further information on the Living Planet Index see http://www.bipindicators.net/lpi.

Proxies:

- **Recovery plans –** The number of threatened species with recovery plans. The development of a recovery plan for a threatened species is often the first step in ensuring that the species does not become extinct. This indicator could also be expressed as the percentage of threatened species that have such plans. Information on recovery plans could also be disaggregated for different levels of threat, such as the number of critically endangered species that have recovery plans.
- **Protected area –** Trends in the coverage of key biodiversity areas. Globally and in many countries the major threat to species is habitat loss. By effectively protecting these key areas, in many cases it is possible to improve the conservation status of a species. This is the rationale behind the Alliance for Zero Extinction sites, Key Bird Areas, Important Plant Areas and similar methods for identifying key biodiversity areas. Information on the extent to which such areas are protected can be used to inform assessment of progress towards this target.

24. As a result of biological inertia, there can be significant time delays between when an action is taken to conserve a species and when a species begins to exhibit changes in its conservation status. For this reason, and given the time frame of the Strategic Plan, it may be more informative to monitor the actions that have been taken to prevent the extinction of a species rather than assessing its conservation status directly. In general, information on the actions taken to reach the Aichi Biodiversity Targets under Strategic Goal B, which focuses on addressing the direct causes of biodiversity loss, could be used to inform assessments of progress towards Target 12. Examples of the types of actions that could be monitored include actions to control or eradicate invasive alien species, measures to reduce the effects of pollution, and efforts to promote sustainable use.

25. In addition to taking actions to reduce the direct threats to species other types of actions that can be useful in assessing progress towards this target are breeding and reintroduction programmes. Breeding and reintroduction programmes are often used to bolster species numbers, and information on these types of actions can be used to inform assessments of progress towards this target. Such actions are also used when species have already gone extinct in the wild or where they have been extirpated for specific areas.

15. Target 15 – By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

26. Degraded landscapes in many cases represent an unused opportunity to contribute to biodiversity conservation and the mitigation of climate change. Restored landscapes and seascapes can improve resilience including adaptive capacity of ecosystems and societies, and can contribute to climate change adaptation and generate additional benefits for people, in particular indigenous and local communities and the rural poor. Specifically this target requires that ecosystem resilience and the contribution of biodiversity to carbon stocks through conservation and restoration be enhanced, including through the restoration of 15 per cent of degraded lands.

27. The two main elements of this target that need to be monitored are the conservation of ecosystems and efforts to restore degraded ecosystems. The Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020 identified several indicators relevant to this target. The most relevant of these are:

- Population trends of forest-dependent species in forests under restoration;
- Status and trends in extent and condition of habitats that provide carbon storage.

28. In addition to the two indicators above there are a number possible ways for countries to assess progress towards this target.

- **Restored area** – Change in the area of degraded ecosystems restored. The majority of countries have natural habitats that have been degraded through various activities. By monitoring the amount of this land that has been restored it will be possible to assess progress towards this target. The indicator can be expressed in several ways. In the simplest form it can be expressed as the total amount of land restored. However, the indicator becomes more relevant, particularly in terms of assessing progress towards the target, when it is expressed as a percentage of the total amount of degraded area in the country.
- **Area protected –** Change in the amount of high carbon area protected. Given the emphasis on climate change mitigation in this target the information on the protection of habitats which represent significant carbon sinks could be used to assess progress towards this target. Ecosystems which represent major carbon stocks include tropical forests, many wetlands, peatlands, seagrass beds and mangroves.

17. Target 17 – By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

29. National biodiversity strategies and action plans (NBSAPs) are the key instrument for translating the Convention and decisions of the Conference of the Parties into national action. For this reason it is essential that Parties have developed, adopted and commenced implementing as a policy instrument an updated NBSAP, or similar instrument, which is in line with the goals and targets set out in the Strategic Plan.

30. The Ad Hoc Technical Expert Group Meeting on Indicators for the Strategic Plan for Biodiversity 2011-2020 identified trends in implementation of national biodiversity strategies and action plans, including development, comprehensiveness, adoption and implementation as the most relevant indicator for this target. This indicator is primarily suited to monitoring progress towards this target at the global level. At the national level there are several aspects of NBSAP development and implementation that countries can monitor and use to assess their progress towards this target.

31. At the national level, progress towards this target can be monitored by using two different types of information: Progress in the development or updating of the national biodiversity strategy and action plan and the progress made in adopting the document as a policy instrument.

- **Development or update of the NBSAP** - Most Parties have developed an NBSAP; however, with the adoption of the Strategic Plan for Biodiversity 2011-2020, many will need to be revised and or updated in order to reflect its outcomes. By monitoring the progress that is being made in developing or updating an NBSAP, it is possible to gauge progress towards this target. A number of resources have been developed to facilitate the development or updating of NBSAPs[11] and as part of these key steps in the development or updating process have been identified. These steps include bringing different stakeholders together to begin planning, undertaking biodiversity assessments, developing a strategy, developing an action plan, the implementation of the NBSAP, monitoring and evaluating its impacts, reporting on progress and challenges, and updating or revising the plan. These different steps can be used as milestones in order to assess the amount of progress that has been made.
- **NBSAP adopted as a policy instrument -** Once Parties have developed their NBSAP it should be adopted or otherwise incorporated into government policy so that it can be actively implemented. This is to ensure that it is mainstreamed into the planning and activities of all those sectors whose activities can have an impact (positive and negative) on biodiversity. There are a variety of ways that an NBSAP can be adopted as a policy instrument, but generally it would imply integrating the NBSAP into key government policy documents such as national planning documents, poverty reduction strategies, biodiversity laws or decrees.

[11] For example see https://www.cbd.int/nbsap/training/default.shtml.

32. In addition to the points above, countries could also use information on how their NBSAP was developed in order to inform an assessment of progress towards this target. Information related to stakeholder involvement, and the number and type and event held to develop the NBSAP can be used to help assess progress towards this target.
